

USSR

UDC 621.382.2

DOMANEVSKIY, D. S., LITVINOV, V. L., IOMAKO, V. M., SMILGA, V. P., TKACHEV, V. D., UKHIN, N. A., Belorussian State University imeni V. I. Lenin, Minsk

"Radiation Changes in the Voltage-Current Characteristics of Heavily Doped Gallium Arsenide PN Junctions"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 8, Aug 70, pp 1425-1431

Abstract: An investigation is made into the change in electrical characteristics of heavily doped gallium arsenide PN junctions under the effect of irradiation in a mixed (neutron-gamma) field of a reactor and fast electrons with an energy of 28 MeV. In many specimens tunnel transitions are detected in the initial state with the participation of defect levels in the forbidden band. Emission brings about an increase in excess current due to the introduction of radiation defects which produce closely situated levels throughout the entire forbidden band. An increase was observed in the density of states in the tails of the bands due to activation of the electrically inactive part of the dopants under the effect of radiation. In the case of high radiation intensities, there is an increase in excess current in narrow PN junctions due to the disordered regions which appear in the junction.

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USSR

UDC 546.799.94

ZVARA, I., BELOV, V. Z., DOMANOV, V. P., KOROTKIN, YU. S., CHELIMOKOV, I. P.,
SHALAYEVSKIY, M. R., SHCHEGOLEV, V. A., and YUSSOLIKOVA, M.

"Chemical Isolation of Kurchatovium"

Leningrad, Radiokhimiya, Vol 14, No 1, 1972, pp 119-122

Abstract: Earlier it was shown that during the irradiation of ^{242}Pu with ^{22}Ne ions with energies of 113-119 mev (for $z = 104$), a short-lived, spontaneously fissionable nuclide was detected whose chemical characteristics corresponded to the characteristics of ekahafnium (Ku). The half lives of ^{259}Ku and ^{260}Ku are about 4.5 and 0.1 sec respectively. For these experiments the target film of plutonium oxide (95% ^{242}Pu) with a density of 0.8 mg/cm² was irradiated with ^{22}Ne ions with an energy of 119 mev. This produced a maximum yield for the reaction $^{242}\text{Pu} (^{22}\text{Ne}, 5n) ^{259}\text{Ku}$. gaseous nitrogen was passed over the surface of the target then mixed with small amounts of TiCl_2 and SnCl_2 . The slightly volatile tetrachlorides of the radioactive products formed were separated on a chromatograph. A Ge-Li γ -radiation detector was used to analyze the gas at different points along the column. The isotopes ^{170}Ge , ^{171}Ge , ^{172}Ge (the latter the product of ^{22}Ne reaction with the Al of the target base), ^{242}Ck 1/2

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ZVAPA, I., et al., Radiokhimiya, Vol 14, No 1, 1972, pp 119-122

and ^{246}Cf (the latter two being products of a transfer reaction). It was found that Na, Cs, Ca, Sr, the lanthanides, Np, Pu, Ru, Rh, and Pd are adsorbed only at significantly higher temperatures than Hf (and also the einsteinium Es) whereas the chlorides of In, Sn, Nb, Mo, and Tc are adsorbed only at lower temperatures. Photographs of the expected area of Es adsorption show tracks of fission products which must be those of the ^{259}Es with a $t_{1/2} = 4.5$ sec.

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1/2 C17 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--USE OF ALTERNATING CURRENT DURING THE PREPARATION OF METAL SALTS.
II. THE A.C. ELECTROCHEMICAL DISSOLUTION OF NICKEL IN HYDROCHLORIC ACID
AUTHOR--(C3)-RYAZANOV, A.I., PETRENKO, G.D., DGMANOVA, YE.G.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 838-42
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--INORGANIC SALT, CHEMICAL SYNTHESIS, ELECTRIC FIELD EFFECT,
HYDROCHLORIC ACID, SOLUBILITY, CHEMICAL REACTION RATE, OXALIC ACID,
NICKEL CHLORIDE, ALTERNATING CURRENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/C967 STEP NO--UR/0080/70/043/004/0838/0842
CIRC ACCESSION NO--AP0131552
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0131552

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE USE OF A.C. (50 HZ) FOR DISSOLVING NI (MARK N,0 OR N,1) IN HCL WAS STUDIED AS A FUNCTION OF ACID CONCN. AND C. D. THE OPTIMUM ACID CONCN. WAS 4-6N. THE SOL. OF NICK SUB2 DECREASED AS THE ACID CONCN. INCREASED. OXALIC ACID INCREASED THE RATE OF DISSOLN. (AT HCL CONCN. OF 4-6N) BY CONVERTING NICK SUB2 TO NI OXALATE AND HCL. DURING 1 COMPLETE A.C. CYCLE, 4 ELECTRODE PROCESSES CAN OCCUR, 2 ANODIC AND 2 CATHODIC. FOR DISSOLN. TO OCCUR, THE EFFICIENCY OF THE ANODIC DISSOLN. PROCESS MUST BE GREATER THAN THE EFFICIENCY OF THE CATHODIC DEPOSITION PROCESS.

UNCLASSIFIED

USSR

UDC 613.2-099.-22.7 (Bac. cereus)

BULYGA, M. S., KUL'CHINSKAYA, I. I., and DOMANSKAYA, Ye. D., Volynskaya Oblast Sanitary-Epidemiological Station, Lutsk

"Food Poisoning Caused by Bac. cereus"

Moscow, Voprosy Pitaniya, No 1, 1973, pp 86-87

Abstract: Within 1 to 6 hours after eating ice cream, a group of school children became sick, with symptoms including headache, abdominal pain, nausea, vomiting, diarrhea, but not elevated temperature. Bac. cereus but no other microorganism known to cause acute intestinal disease was isolated from suspected food, stomach contents, washings from implements, etc. An investigation of the place where the ice cream was made revealed that the ingredients had not been properly heated and that the mixture was not cooled according to regulations. In addition, general sanitary regulations had not been followed.

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USSR

UDC 576.851.31.097.22:615.33

PODOSINNIKOVA, L. S., DOMARADSKIY, I. V., LIBINZON, A. YE., LEBEDEVA, S. A.,
and BOGDANOVA, M. I., Rostov-on-Don Antiplague Institute

"Multiple Resistance of El Tor Cholera Vibrios to Antibiotics"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1973,
pp 9-13

Abstract: Fresh isolates of El Tor vibrios from patients with cholera were tested for resistance to a number of antibiotics, and several strains were found to show multiple resistance. Resistance was found to decrease on in vitro passage and, since it is known that the El Tor vibrios readily take up resistance transfer factors from intestinal bacteria, studies were undertaken to pass the putative resistance factor from the vibrios to Pasteurella pestis strains EV and 556/106, and to cure the vibrios with acriflavine. Exposure of the vibrios to 0.1-5 $\mu\text{g}/\text{ml}$ of acriflavine in Marten's broth for 18-20 hrs at 37°C resulted in loss or decrease of resistance. Exconjugate P. pestis cells were found to acquire resistance to tetracycline, levomycetin, and streptomycin from the resistant vibrios; the resistance factor was transferred with a frequency of 2×10^{-4} to 2×10^{-5} . In summary, the results showed that one strain of El Tor vibrios was cured by acriflavine and transferred resistance to

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PODOSINNIKOVA, L. S., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1973, pp 9-13

P. pestis, four other strains transferred resistance to *P. pestis* but exposure to acriflavine only decreased their antibiotic resistance, and one strain, which was resistant to tetracycline, oxytetracycline, penicillin, and ampicillin, did not transfer resistance to *P. pestis* but was cured of resistance to tetracycline and oxytetracycline by acriflavine. The data suggest the extrachromosomal nature of the resistance factor. The failure of one strain to transfer the plasmid to *P. pestis* may have been due to the latter's inability to accept the plasmid, or the factor could have been defective or integrated into the chromosome.

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USSR

UDC 576.851.45.095.3

LEBEDEVA, S. A., SUCHKOV, Yu. G., and DOMARADSKIY, I. V., Corresponding Member of the Academy of Medical Sciences USSR, Scientific Research Anti plague Institute, Rostov-na-Donu

"Syntrophism in Plague Bacteria and the Possible Biological Role of this Phenomenon"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 3, 1970, pp 79-81

Abstract: Experimental data are reported on the existence of intraspecific and interspecies syntrophism among plague bacteria differing in amino-acid requirements. The ability of auxotrophic strains to multiply on a synthetic medium devoid of amino acids by means of syntrophism with prototrophic mutants is the factor responsible for the survival of these bacteria under adverse conditions.

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1/2 013
TITLE--SYNTROPHISM
PHENOMENON -U-
AUTHOR--LEBEDEVA, S.A., SUCHKOV, YU.G., DOMARADSKIY, I.V.
COUNTRY OF INFO--USSR
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 3, PP 79-81
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PLAGUE, BACTERIA, AMINO ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1982/0838
STEP NO--UR/0219/70/069/003/0079/0081
CIRC ACCESSION NO--AP0052272
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0052272

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER GIVES EVIDENCE FOR OCCURENCE OF INTRASPECIES SYNTROPHISM IN PLAGUE CAUSATIVE AGENTS FOUND AMONG STRAINS DIFFERING BY AMINO ACID REQUIREMENT. A DISCRPTION IS GIVEN OF SYNTROPHISM OF A POPULATION OF SOME MUSEUM STRAINS HETEROGENEOUS BY FOOD REQUIREMENT, WHICH ALONG WITH MUTATION TO PROTOTROPHY, CAN PROVIDE SURVIVAL OF AUXOTROPHIC BACTERIA MAINTAINED ON MEDIA DEFICIENT BY GROWTH FACTOR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--SYNTROPHISM IN PLAGUE MICROBE AND POSSIBLE BIOLOGICAL ROLE OF THIS.
PHENOMENON -U-
AUTHOR--LEBEDEVA, S.A., SUCHKOV, YU.G., DOMARADSKIY, I.V.
COUNTRY OF INFO--USSR
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR
3, PP 79-81
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PLAGUE, BACTERIA, AMINO ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1982/0838 STEP NO--UR/0219/70/069/003/0079/0081
CIRC ACCESSION NO--AP0052272
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0052272

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER GIVES EVIDENCE FOR OCCURENCE OF INTRASPECIES SYNTROPHISM IN PLAGUE CAUSATIVE AGENTS FOUND AMONG STRAINS DIFFERING BY AMINO ACID REQUIREMENT. A DISCRIPTION IS GIVEN OF SYNTROPHISM OF A POPULATION OF SOME MUSEUM STRAINS HETEROGENEOUS BY FOOD REQUIREMENT, WHICH ALONG WITH MUTATION TO PROTOTROPHY, CAN PROVIDE SURVIVAL OF AUXOTROPHIC BACTERIA MAINTAINED ON MEDIA DEFICIENT BY GROWTH FACTOR.

UNCLASSIFIED

USSR

UDC 615.373.576.851.315.098.311.015.4:612.111

SOLOV'YEV, V. D., KOBRINSKIY, G. D., DOMARADSKIY, I. V., LAVRUSHKO, V. S.,
LOBANOV, V. V., BICHUL', K. G., GAL'PSEVA, G. V., RASSUDOV, and PUSHNITSA, N. P.,
Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical
Sciences USSR, and Rostov-on-Don Antiplague Institute

"Effect on Erythrocytes of the Receptor-Destroying Enzyme from Filtrates of
Cholera Vibrio Cultures"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972,
pp 42-46

Abstract: Erythrocytes treated with filtrates of cholera vibrio cultures lose
their capacity for agglutination by certain viruses. The authors studied this
phenomenon of the "receptor-destroying enzyme" (neuraminidase) to determine
the possibility of using it as an aid in diagnosing cholera. In in vitro exper-
iments with guinea pig erythrocytes, filtrates of classic NAG, and El Tor
vibrio cultures prevented the cells from being agglutinated by swine influenza
virus, whereas filtrates of the control cultures (Comamonas, Pseudomonas, and
E. coli) did not do so. The same effect was observed in the case of erythrocytes
from the intestinal contents of suckling rabbits infected with various cholera
vibrio strains. An investigation of the intestinal contents of 279 patients
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SOLOV'YEV, V. D., Zhurnal Mikrobiologii, Epidemiologii i Immunob ologii, No 10, 1972, pp 42-46

suffering from gastritis, dysentery, and other gastrointestinal disorders with symptoms resembling those produced by El Tor cholera showed that the hemagglutination reaction was negative in 94% of those over 1 year of age and in 46% of the infants.

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USSR

UDC 576.851.315.098.345.5

YAGOVKIN, E. A., DOMARADSKIY, I. V., KISELEVA, V. I., and LOBANOV, V. V.,
Rostov-on-Don Antiplague Institute

"Isolation of a Cholera Vibrio Lipopolysaccharide and Some of Its Biological Properties"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972,
pp 47-52

Abstract: A purified lipopolysaccharide extracted from strain 2913 of the El Tor vibrio, Ogawa serotype, was examined as a possible component of a chemical vaccine against cholera. A modification of Westphal's method was used to obtain the lipopolysaccharide. The yield of the purified preparation was 2% of the dry bacterial mass. It contained 2.67% nitrogen, 1.3% phosphorus, 1.3% protein, 51.7% carbohydrates, and 0.4% nucleic acids. The lipid component was determined qualitatively by staining the electrophoregrams with Sudan black. Ouchterlony's gel precipitation reaction and immunoelectrophoresis in agar gel revealed two precipitation bands of thermostable antigens. The preparation had low toxicity for mice and moderate pyrogenicity for rabbits. It exhibited preventive properties in a test of active protection of mice. Parenteral immunization of rabbits with lipopolysaccharide resulted in the formation of vibriocidal antibodies in high titers.

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Microbiology

USSR

UDC 576.851.45.097.22:615.33

MISHAN'KIN, B. N., DOMARADSKIY, I. V., and RYSHKO, I. V., Rostov-on-Don
Scientific Research Antiplague Institute

"Inactivation by Phosphorylation of Aminoglycoside Antibiotics by the EB
Strain of Pasteurella pestis Carrying an Episome of Multiple Drug Resistance"

Moscow, Antibiotiki, No 12, 1971, pp 1081-1085

Abstract: The EB-R₆ strain of P. pestis to which an episome of multiple drug resistance was transmitted from E. coli (strain 4018/62 R₆) was able to inactivate the aminoglycoside antibiotics streptomycin, monomycin, kanamycin, and neomycin. This did not occur when extracts from the original EB strain or a variant with chromosomal resistance to the antibiotics was used instead of extracts from EB-R₆ cells. To test the assumption that phosphorylation was the cause of inactivation of the antibiotics, antibiotics were treated with 1 mg of alkaline phosphatase. Some 50% of the activity of kanamycin, monomycin, and streptomycin and 20% of that of neomycin were restored after 18 hours of incubation at 37°C.

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USSR

UDC 576.851.45.095

GURLEVA, G. G., DOMARADSKIY, I. V., KHALYAPINA, Ye. Ye., ALUTIN, I. M.,
TARANOVA, V. N., PUSHNITSA, N. P., KOL'TSOVA, Ye. G., MARCHENKOV, V. I.,
SHCHEGLAKOVA, N. M., and GRIGOR'YAN, E. G., Rostov-on-Don Scientific Research
Antiplague Institute

"Biological Properties of Pasteurellae Isolated From Various Species of
Animals"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971,
pp 54-58

Abstract: A comparative study was performed on *P. avicida*, *P. cuniculicida*,
B. avisepticus, *B. suis*, *B. bovis*, and *B. ovis* (a total
of 27 strains) isolated from chickens, pigs, suckling pigs, calves, steers,
sheep, house mice, and rabbits in various geographic areas in 1936-1967. The
tinctorial, cultural, morphological, and biochemical properties of these
strains as well as their sensitivity to antibiotics, nucleotide DNA compo-
sition, and virulence to albino mice, albino rats, and pigeons revealed that
they constitute a homogeneous group and belong to a single species -- *P.*
multocida. Significantly, all the strains investigated are sensitive to
colicines E+J, F, G, J+G, and S₅. If the findings are confirmed by supple-
mentary investigations, the colicin test may well be used for a differential
diagnosis of *P. multocida*.

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USSR

UDC 576.851.315.097.5.078.39

DOMARADSKIY, I. V. and YEROKHIN, Ye. P., Rostov-na-Donu Scientific Research
Antiplague Institute

"A Method of Determining Vibriocidal Antibodies From the Fermentation of
Carbohydrates"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971,
pp 31-33

Abstract: The proposed method of determining vibriocidal antibodies in human serum is based on the principle that microbial growth, i.e., the absence of vibriocidal antibodies, can be judged from the fermentation of sucrose revealed by an indicator. The dilution of serum and complement, preparation and addition of microbes, and the tests themselves are carried out the same way as in Finkelstein's method (except that sucrose and Andrade's indicator are added to the specimens). The proposed method is more efficient than Finkelstein's because it does not require cultivation of the microbes in dishes and counting the colonies, and the results can be obtained the same day. The two methods yielded similar results when applied to sera taken from cholera patients, vibrio carriers, persons vaccinated against cholera, and healthy persons.

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USSR

UDC 575.111:575.24:576.858

RYAPIS, I. V., KOROL', V. V. SUCHKOV, Yu. G., and ~~DOMARADSKIY, I. V.~~,
Rostov-na-Donu Scientific Research Antiplague Institute

"The Use of Auxotrophic Mutants to Study the Possibility of Mutual Conversion of Cysteine and Methionine in *Pasteurella pestis*"

Moscow, Genetika, No 9, 1971, pp 155-159

Abstract: Treatment of *P. pestis* with N-nitroso-N-methylurea yielded 139 auxotrophic mutants, of which 35 required sulfur-containing amino acids - 28 cys⁻, 6 met⁻, and 1 met⁻(cys⁻). After one year of storage, 25 mutants reverted to the original phenotype, 13 being cysteine-dependent. There was a high frequency of occurrence of revertants in 4 of 11-cysteine-dependent mutants. All the met⁻ mutants remained auxotrophs and only rarely reverted to the original phenotype. The mutants were indistinguishable from the parent strain in cultural, morphological, and biochemical properties except for one of the cysteine-dependent mutants, which did not form typical colonies on Hottinger's agar and fermented mannose, xylose, arabinose, and galactose slowly. Study of the capacity of the mutants to grow on media with cysteine and methionine precursors showed that they differ in nutritional requirements. The cysteine-cystathionine-homocystine-methionine reaction is apparently catalyzed by the prototrophic variant of *P. pestis* in both directions.

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USSR

UDC 576.851.45.098.31:577.158.345

DOMARADSKIY, I. V. and SHIMANYUK, N. Ya., Rostov-na-Donu Scientific Research
Anti-Plague Institute

"Presence of Amino Acid Decarboxylases in *Francisella tularensis*"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971,
pp 32-35

Abstract: Earlier attempts to determine whether tularemia bacteria can decarboxylate amino acids were unsuccessful because of the inadequacy of the nutrient medium used (MacCoy's). When instead of MacCoy's medium, agar D with cystine and glucose was used, it was found that most of the 11 strains of *F. tularensis* and *F. novicida* tested were able to decarboxylate aspartic acid, lysine, and arginine. But neither *F. tularensis* nor *F. novicida* could decarboxylate ornithine, histidine, tyrosine, or glutamate.

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USSR

UDC 681.833:519.2

DOMARATSKIY, A. N., Novosibirsk

"General Problems in the Automatic Determination of the Statistical Characteristics of Random Signals"

Novosibirsk, Avtometriya, No 4, Jul-Aug 73, pp 34-40

Abstract: In processing steady-state, ergodic, random signals, the average value of the random signal over a sufficiently long interval of observation is taken as the evaluation of the desired probability characteristic. Thus, the actual value of the variable with respect to time is subject to two operators: a basic operator which determines the realization and an averaging operator. In the general case, the sequence of operations is not permutable. The averaging operator may be either continuous or discrete. For simplicity of hardware implementation, it is frequently more expedient to use an iteration algorithm in determining the average:

$$a_n = a_{n-1} + \beta_n(x_n - a_{n-1}),$$

where β_n represents a series of positive numbers less than 1 and $a_0 = 0$
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DOMARATSKIY, A. N., Avtometriya, No 4, Jul-Aug 73, pp 34-40

although the technique produces distortions and inconsistencies in the general case, it is useful in experiments, where knowledge of the requisite degree of accuracy permits appropriate choice of a series of numbers. Studies show a trade-off between the rate of convergence and the final accuracy, depending on the numbers in the series. A value of β equal $1/2^k$, where K is the iteration number, is found to be appropriate in many cases.

Determination of the optimum quantization interval is complicated and can depend on the argument of the characteristic. Preliminary calculations to determine the optimal value are usually not justified, so that the use of a constant is appropriate. A simple formula for determining the expected accuracy of the discrete calculation with respect to the continuous is given in the article.

In order to process random signals it is necessary to have some approximate estimate of the correlation interval. This, in turn, requires the approximate determination of the width of its spectrum.

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USSR

UDC: 621.378.525:532.57

DOMARATSKIY, A. N., KUDRYAVTSEV, M. B., SOBOLEV, V. S., SHMOYLOV, N. F., and YURLOV, Yu. I.

"Investigating the Effect of Scattered Particle Concentration on the Correlation Time of the Laser Doppler Velocity Measurement Signal"

Novosibirsk, Avtometriya, No 5, 1972, pp 122-125

Abstract: The experimental investigation of the effect of scattered particle concentration on the change in the statistical characteristics of a Doppler signal is described. It was conducted for the change in the maximum correlation time of the Doppler signal correlation function. A diagram of the experimental apparatus, involving a single laser type LG-75, operating in the TEM₀₀ mode, is given. The single beam from the laser is split in two by a dividing plate, with the diameters of each beam measuring 0.02 and 0.1 cm, and both are then converged on a bulb of double-distilled water. The result is the formation of an interference pattern. It is concluded from the experiment that the correlation time and the correlation function of the Doppler signal are dependent on the change in scattered particle concentration if there
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UDC: 621.378.525:532.57

DOMARATSKIY, A. N., et al, Avtometriya, No 5, 1972, pp 122-125

are fewer than 10 particles in the scattering space and are independent of the change if there are, on the average, 15-70 scattered particles.

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1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--RELATION BETWEEN THE MECHANICAL BEHAVIOR OF HIGH DENSITY
POLYETHYLENE AND THE MOLECULAR WEIGHT DISTRIBUTION -U-
AUTHOR-(G5)-KARASEV, A.N., ANDREYEVA, I.N., DOMAREVA, N.M., KOSMATYKH,
K.I., KARASEVA, M.G.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(5), 1127-37
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--POLYETHYLENE, TENSILE STRENGTH, MOLECULAR WEIGHT, CRACK
PROPAGATION RATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1376 STEP NO--UR/0459/70/012/005/1127/1137
CIRC ACCESSION NO--AP0135050
UNCLASSIFIED

2/2 C23

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135050

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE TENSILE STRENGTH AT BREAK AND THE ELONGATION AT BREAK OF HIGH,D. POLYETHYLENE (I) FROM MINUS 40 TO PLUS 100DEGREES WERE MAX. FOR I SAMPLES WITH NARROW MOL.,WT. DISTRIBUTION AND CONTG. HIGH,MOL.,WT. FRACTIONS. THE ABSENCE OF FRACTIONS WITH MOL. WT. IS GREATER THAN OR EQUAL TO 10 PRIME6 REDUCED THE CRACK RESISTANCE OF I EVEN WHEN THE MOL.,WT. DISTRIBUTION WAS NARROW. FACILITY: NAUCH.,ISSLED. INST. POLIM. PLASTMASS, LENINGRAD, USSR.

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SECTION III SO: SELECTED RESEARCH RESULTS

PC-99

SEPT 71

Name: Institute of Biophysics, Pushchino

Description:

(U) During this quarterly reporting period, 25 new articles were identified from the Institute of Biophysics, Pushchino. On the basis of these articles, it was possible to identify 32 new personalities with the institute. These personalities, the subjects of the articles, and the dates are given below:

biophysics

all biophysics / physiology

Allyova, S. A.	phosphorylation	1971 (34)
Aplavaya, G. F.	radiation effect	1970 (35)
Arlyova, D. F.	radiation effect	1971 (36)
Azhip, Ya. I.	hypoxia	1969 (37)
Bregadze, I. F.	radiation effect	1970 (38)
Buzol, Ye. P.	luminescence	1970 (39)
Dmitriyeva, T. L.	radiation effect	1969 (40)
Erlyeva, V. A.	blood plasma	1970 (39)
Domareva, O. P.	radiation effect	1971 (41)
Dubrov, A. P.	biochemical analysis	1971 (42)
Gabulova, N. A.	muscle physiology	1970 (35)
Gonchar, Ye. E.	radiation effect	1971 (43)
Ishova, H. N.	serum albumin	1971 (35)
Kanackin, V. S.	phosphorylation	1971 (44)
Klukhova, G. K.	muscle physiology	1970 (45)
Kulov, A. N.	salivary gland	1970 (46)
Kiyagina, V. P.	oligonucleotide	1971 (44)
Korol, B. A.	radiation effect	1971 (45)
Koshaleva, G. N.	biochemical analysis	1971 (45)

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Kuzmina, S. V.	tissue culture	1970 (47)
Matkovich, D. S.	lactate dehydrogenase	1971 (43)
Medvedeva, I. P.	radiation effect	1971 (41)
Peshkova, L. V.	phosphorylation	1971 (49)
Pronevich, L. A.	antibiotic	1970 (50)
Rodionova, M. A.	mitochondrion	1971 (51)
Shchepakina, V. N.	phosphorylation	1971 (49)
Shobayev, Ye. H.	radiation/vibration	1970 (52)
Shvabov, V. A.	radiation effect	1970 (35)
Tevetkov, V. D.	blood plasma	1969 (40)
Ustikhina, N. V.	lactate dehydrogenase	1971 (48)
Vilenchik, M. M.	radiation effect	1970 (53)
Zamyatnin, A. A.	muscle physiology	1971 (42)

Dubrov and Koshcheva (41) are associated with the Laboratory of Cell Biophysics at the Institute. Reference 52 above is of special interest since it presents an investigation of combined stresses, i.e., radiation and vibration. In addition to the above articles, five of the twenty-five (54-58) were authored by persons already identified with the Institute of Biophysics, Pushchino. Reference 55 associates the authors of the article, L. V. Siochenikina, V. L. Miguelnina, and A. M. Kuzin, with the Department of Radiobiology at the Institute.

UNCLASSIFIED

USSR

UDC: 534.86

PRIALGAUSKAS, S., KALIS, R.-I., and DOMARKAS, V.

"Electrical Modeling of Ultrasonic Piezo-Converters in the Form of Plates"

Nauch. tr. vyssh. ucheb. zavedeniy LitSSR. Ul'trazvuk (Scientific Works of the Lithuanian VUZ; Ultrasonics) No 4, 1972, pp 47-54 (from RZh--Fizika, No 4, 1973, Abstract No 4Zh671)

Translation: A method is described for modeling the frequency and pulse characteristics of a piezo-converter in the form of plates, using an equivalent circuit without feedback capacitance. It is shown that modeling a piezo-converter with a high electromechanical coupling coefficient in such a simplified system requires adjustment of the delay time of the electrical delay lines used in the model. The circuit of the model is given, along with formulas for computing the elements of the system. The theoretical conclusions are illustrated by experimental data. Authors' abstract

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USSR

UDC: 534.86

DOMARKAS, V. and KAZHIS, R.-I.

"Frequency Characteristics of Piezoelectric Pickups With Transition Regions and Electrically Matching Circuits"

Nauch. tr. vyssh. ucheb. zavedeniy LitSSR. Ul'trazvuk (Scientific Works of the Lithuanian VUZ; Ultrasonics) No 4, 1972, pp 71-78 (from RZh--Fizika, No 4, 1973, Abstract No 4Zh673)

Translation: The authors consider the effect of electrically matching circuits with the frequency characteristics of piezoelectric pickups with transition regions operating in water. It is shown that, in the case of a half-wave transition region, the pickup loaded by a parallel-connected inductance and an active resistance has four maxima in its amplitude-frequency characteristic. Linearity of the phase-frequency characteristic thus cannot be achieved by a choice of damper and circuit-matching parameters. A pickup with a quarter-wave transition region and with the circuit specified above has three maxima in its amplitude-frequency characteristic. By choosing the degree of mechanical damping and the Q of the electrical circuit for piezoelectric ceramic pickups with a quarter-wave transition region, a relative pass band of 75% of the antiresonant frequency of a piezoelectric converter with good linearity of the phase-frequency characteristic can be attained.

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USSR

UDC: 534.86

KAZHENE, S., KAZHIS, R.-I., and DOMARKAS, V.

"Dependence of the Acoustical Impedance of a Piezoelectric Converter With a Transition Region on the Electrical Load"

Nauch. tr. vyssh. ucheb. zavedeniy LitSSR. Ul'trazvuk (Scientific Works of the Lithuanian VUZ; Ultrasonics) No 4, 1972, pp 65-69 (from KZh--Fizika, No 4, 1973, Abstract No 4Zh672)

Translation: General expressions are obtained for the acoustical impedance of a piezo-converter with the transition region and the electrical load taken into account. The effect of the electrical circuits on the amount of acoustical impedance is analyzed at the antiresonant frequency of the converter. It is shown that the converter loaded by an inductance and an active resistance can be given an acoustical impedance equal to the characteristic acoustic impedance of the working medium. In the case of liquid working media, a match between the converter and the working medium can easily be attained with a quarter-wave transition region. Authors' abstract

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- 9 -

USSR

UDC 534.232

KAZHIS, R. I., DOMARKAS, V. I., Kaunas Polytechnical Institute

"A Piezoelectric Receiver of Acoustic Oscillations"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,
No 23, 1970, Author's Certificate No 276551, Filed 20 Jan 69, p 147

Abstract: This author's certificate introduces a piezoelectric receiver of acoustic oscillations made in the form of a mechanically undamped piezoelectric plate. As a distinguishing feature of the patent, the passband is extended by connecting an active electrical circuit in parallel with the mechanically undamped piezoelectric plate, this circuit having the input impedance of the static capacitance of the piezoelectric plate.

1/1

USSR

UDC 533.697

DOMASHENKO, A. M.

"Investigation of the Flow in Front of a Grating in a Two-Dimensional Supersonic Stream"

V sb. Lopatochn. mashiny i struyn. apparaty. Vyp. 5 (Bladed Machines and Jet Equipment. No 5--collection of works), Moscow, "Mashinostroyeniye", 1971, pp 6-27 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B288)

Translation: In a supersonic two-dimensional flow in front of a grating made up of a finite number of airfoils, an aperiodic system of discontinuities and rarefaction waves arises which changes the conditions of flow around the foils as compared with an infinite grating. Using simple assumptions on the form of the waves and discontinuities, as well as assuming that they are fairly weak, the author calculates the losses of total pressure in the discontinuities and recommends refinements in the procedure for experimental investigation of gratings in a two-dimensional supersonic jet of finite width. G. Yu. Stepanov.

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- 24 -

1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--EXPERIMENTAL DETERMINATION OF LATERAL THRUST COEFFICIENTS FOR DRY,
LOOSE, FIBROUS GASKET PACKING -U-
AUTHOR--DOMASHNEV, A.D., KHEMLNIKER, V.L.
COUNTRY OF INFO--USSR
SOURCE--KHIM. NEFT. MASHINOSTR. 1970, (2) 1-2
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--SEAL, GRAPHITE, MOLYBDENUM DISULFIDE, PACKING MATERIAL,
LAMINATED MATERIAL, ASBESTOS/(U)TCHZ LAMINATED GRAPHITE, (U)AM50 PACKING
MATERIAL, (U)AG50 GASKET
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/1137 STEP NO--UR/0314/70/000/002/0001/0002
CIRC ACCESSION NO--AP0107626
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107626

ABSTRACT/EXTRACT--(U) GP-0- THE COEFF. OF LATERAL THRUST (K) WAS DETD.
FOR THE FOLLOWING MATERIALS: MOS SUB2 (NATURAL MOLYBDENITE) (K EQUALS
0.46); TCHZ LAMINATED GRAPHITE (K EQUALS 0.36); AM50 PACKING CONTG. MOS
SUB2 50; LONG FIBERED SERPENTINE ASBESTOS 45, AND AL POWDER 5PERCENT (K
EQUALS 0.38); AG 50 ASBOGRAPHITE GASKET CONTG. 50PERCENT GRAPHITE (K
EQUALS 0.31); AND AS DRY ASBESTOS CORD (K EQUALS 0.27). AN OUTLINE OF
THE SPECIAL APP. USED FOR THE DETNS., AND CURVES SHOWING THE DEPENDENCE
OF THE LATERAL THRUST ON THE AXIAL THRUST FOR THESE MATERIALS ARE GIVEN.

UNCLASSIFIED

USSR

UDC 546.171.1

AYVAZOV, M. L., SARKISYAN, A. G., DOMASHNEV, I. A., GUROV, S. V., Institute of New Chemical Problems, Academy of Sciences USSR

"Synthesis and Study of Alloys in the TiO-MnO Cross Section"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, No 7, 1972, pp 1218-1220

Abstract: In certain trinary phases, a deviation is observed from the ordinary A_2B formula. The deviation from stoichiometry is most significant when component B is chrome or manganese. In this case, the stoichiometric composition shifts from A_2 to B to AB. The literature contains no data on the nature of formation of phases in the cross section TiO-MnO. Study of this section is of both theoretical and practical interest, since as the 3d shell is filled, the electro-physical properties of monoxides shift from metal-like to dielectric. TiO-MnO specimens were prepared each 10 wt. % throughout the entire concentration interval and studied. MnO dissolves in TiO up to 15 wt. %, TiO in MnO--up to 40 wt. %. The alloys have an NaCl-like structure. The single-phase area in the TiO-MnO cross section can be considered a solid solution of substitution.

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USSR

UDC 546.824'171.1:541.67

AYVAZOV, M. I., DOMASHNEV, I. A, and KIREYEVA, I. M., Institute for New Problems, Academy of Sciences USSR

"Electric Properties of $\text{TiN}_{0.96}$, $\text{TiB}_{0.43}\text{N}_{0.78}$ and $\text{TiSi}_{0.51}\text{N}_{0.42}$ "

Moscow, Izvestiya Akademii nauk SSSR, Neorganicheskiye materialy, Vol 7, No 10, Oct 71, pp 1739-1742

Abstract: The study of the electric conductivity, thermal emf, and Hall effect of isostructural compounds (NaCl-type structure) of $\text{Ti}_{0.96}$ and $\text{TiB}_{0.43}\text{N}_{0.78}$ over a wide temperature range has shown the need of an energy scheme of overlapping zones to explain the charge transfer process in the carriers. Substituting boron for nitrogen reduces the degree of fullness. The electrophysical properties of $\text{TiSi}_{0.51}\text{N}_{0.42}$ compounds (NaCl-type structure) at high temperatures may be ascribed as semiconductor-type compounds with a forbidden zone width of 0.4 ev. The conductivity, thermal emf, and Hall effect were studied on hot-formed specimens with 5-8% porosity. The former two properties were measured within 300-1600°K, while the Hall effect -- within 300-1000°K. Temperature-property relationships are

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USSR

AYVAZOV, M. I., et al, Izvestiya Akademii nauk SSSR, Neorganicheskiye materialy, Vol 7, No 10, Oct 71, pp 1739-1742

presented in curves. The source products for the study were TiCl_4 , BCl_3 , SiHCl_3 , H_2 , and especially pure N_2 . (2 illustrations, 1 table, 9 bibliographic references).

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USSR

UDC. 546.821

AYVAZOV, M. I. and DOMASHNEV, I. A., Institute for New Chemical Problems,
Academy of Sciences USSR

"Electrophysical Properties of Titanium Diboride and Alloys in the Ti-B-N
System"

Moscow, Izvestiya Akademii nauk SSSR, Neorganicheskiye materialy, Vol 7,
No 10, Oct 71, pp 1735-1738

Abstract: Described is a study of the electrophysical properties of titanium diboride and alloys in the Ti-B-N system. The properties included electric conductivity, thermal emf, and Hall effect over a wide temperature range. It is shown that compositions from the TiB_2 homogeneity region and Ti-B-N alloys with an AlB_2 structure contain zones with various degrees of fullness. The electrophysical properties of these compositions may be adequately explained using the model of overlapping zones. The compositions from the TiB_2 homogeneity region and alloys of the Ti-B-N system were obtained by crystallization from the gas phase. The conductivity and thermal emf were studied within 300-1500°K; the Hall effect -- within 300-1100°K. The temperature relationships of these properties are presented in curves. (6 illustrations, 1 table).

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USSR

UDC 546'821'27'17:538.214

AYVAZOV, M. I., GUROV, S. V., ~~DOMASHNEV, I. A.~~, and
KIREYEVA, I. M., Institute of New Chemical Problems of the
Academy of Sciences USSR

"Investigation of Magnetic Properties of Variable Composition
Phases of Titanium Nitride, Titanium Diboride, and Alloys in
the Ti — B — N System"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materi-
aly, Vol 7, No 7, Jul 71, pp 1176 —1179

Abstract : The magnetic susceptibility of alloys in the system
Ti — B — N and of the variable composition phase TiB_{2+x} were in-
vestigated in the temperature interval of 100—1300 °K . Demon-
strated investigation results of the temperature dependence of
the magnetic susceptibility show that the latter is characteri-
zed by temperature-independent high values of the susceptibility
in the region of low temperatures. The susceptibility of two com-
positions TiN_{1-x} probably can be expressed by $\chi = \chi_d + \chi_c + \chi_e$,
where χ_d =diamagnetism of the ionic hull, χ_c = Curie susceptibili-

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USSR

AYVAZOV, M. I., et al., Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 7, No 7, Jul 71, pp 1176-1179

ty, and χ_e =electron paramagnetism. The initial concentration of charge carriers (p-type) is on all TiB_2 -compositions of the order 10^{21} cm^{-3} . The magnetic susceptibilities of TiN and $T-B-N$ compositions show a notable effect of the crystalline lattice on the formation of "quasi-localized" electron conditions. The presence of a partially filled up 2p-zone effects an increased Pauli paramagnetism on TiB_2 -compositions at low temperatures and the appearance of two kinds of carriers at high temperatures. Four illustr., one table, eight biblio. refs.

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1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--NATURE OF NON STOICHIOMETRIC DEFECTS IN TITANIUM NITRIDE PHASES OF
VARIABLE COMPOSITION -U-
AUTHOR--(04)-AYVAZOV, M.I., DOMASHNEV, I.A., SARKISYAN, A.G., REZCHIKOVA,
T.V.
COUNTRY OF INFO--USSR
SOURCE--IZVEST. AKAD. NAUK SSSR, NEORG. MATERIALY, APR. 1970, 6, (4),
745-749
DATE PUBLISHED----APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CRYSTAL LATTICE DEFECT, TITANIUM COMPOUND, NITRIDE, ELECTRIC
PROPERTY, METAL OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3003/1449

STEP NO--UR/0363/70/006/004/0745/0749

CIRC ACCESSION NO--AP0130382

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130382

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NATURE OF THE NON STOICHIOMETRIC DEFECTS OCCURRING IN TIN SUBX PHASE OF VARIABLE COMPOSITON (X EQUALS 0.6-0.96) WAS STUDIED AND CORRELATED WITH CORRESPONDING CHANGES IN THE ELECTRO PHYSICAL PROPERTIES, AS WELL AS WITH ANALOGOUS CHANGES TAKING PLACE IN OXIDE PHASES. THE NON STOICHIOMETRIC DEFECTS TENDED TO CHANGE THE EFFECTIVE MASSES OF THE CARRIERS IN THESE COMPOUNDS; LOCAL CARRIER CONCENTRATIONS ALSO DEVELOPED AND ANOMALOUS ENERGY GAPS APPEARED.

UNCLASSIFIED

USSR

UDC 546.763'171.1:538.22

AYVAZOV, M. I., DOMASHNEV, I. A., GUROV, S. V., and REZCHIKOVA, T. V.,
Institute of New Chemical Problems, Academy of Sciences USSR

"Electrophysical and Magnetic Properties of Chromium Nitride"

Moscow, Neorganicheskiye Materialy, Vol 9, No 4, Apr 73, pp 600-603

Abstract: The electric conductivity, thermal emf, Hall effect, magnetic resistance, and magnetic susceptibility of CrN over a wide temperature interval were investigated. It was found that CrN is a more ionic compound than nitrides of titanium and vanadium. Amplification of the ionicity percentage in M-X interactions leads to realization of the system of spin-polarization electron states. A phase transition was observed at 290°K to CrN^{0.98} which was associated with the trigonal distortion of the crystal lattice. 3 figures, 10 bibliographic references.

1/1

1/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DIFFERENTIAL DIAGNOSIS OF VASCULAR DISEASES OF THE BRAIN WITH A
TUMOR LIKE COURSE -U-
AUTHOR--DOMAYEV, YU.A.
COUNTRY OF INFO--USSR
SOURCE--VARCHENNOYE DELO, 1970, NR 4, PP 80-83
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BRAIN, TUMOR, SYNDROME, HEADACHE, EPILEPSY, MENTAL DISORDER,
DIAGNOSTIC MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1866 STEP NO--UR/0475/10/000/004/0080/0083
CIRC ACCESSION NO--AP0127276
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127276

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PSEUDOTUMOUR SYNDROME MAY BE
CUASED BY SEVERAL VASCULAR AFFECTIONS OF THE BRAIN, AND DEVELOPMENT OF
THE SYMPTOMATOLOGY MAY IMITATE BRAIN TUMOURS OF VARIOUS LOCATIONS. THE
CLINICAL PICTURE OF ATYPICAL FORMS OF CEREBRAL VASCULAR PATHOLOGY NOT
INFREQUENTLY SHOWED TUMOUR LIKE SYMPTOMS (HEADACHES, PAPILLEDEMA,
EPILEPTIC SEIZURES, MENTAL DISORDERS, PROTEIN CELLULAR DISSOCIATION).
ONLY CAREFUL EVALUATION OF ALL SYMPTOMS AND INTERPRETATION OF ADJUNCTIVE
METHODS LEADS TO CORRECT DIFFERENTIAL DIAGNOSIS. FACILITY:
CHITINSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC: 621.373.431

DOMERONSKAYA, G. S., LAVINCO, E. V., RYBINSKIY, A. N.

"A Nanosecond Pulse Shaper-Limiter"

Tr. 7-y Konferentsii po yadern. elektron. T. 2, Ch. 2 (Works of the Seventh Conference on Nuclear Electronics. Vol 2, Part 2), Moscow, Atomizdat, 1970, pp 171-173 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7G271)

Translation: The article describes a shaping circuit which uses a section of line shorted across the end and connected in the cathode circuit of a cathode-plate buffer stage. Use of this type of circuit extends the range of amplitudes of the input pulses while maintaining a very steep leading edge. Bibliography of two titles. N. S.

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1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SOLUBILITY DIAGRAM FOR A NA SUB2 H SUB2 Y DISODIUM SALT OF
EDTA-KOH-H SUB2 O TERNARY SYSTEM AT 25DEGREES -U-
AUTHOR--(03)-MERKULOVA, K.S., DOMBROVSKAYA, N.S., BRUYLE, YE.S.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 881-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SOLUBILITY, METAL COMPLEX COMPOUND, SODIUM COMPOUND, POTASSIUM
COMPOUND, HYDROXIDE, YTTRIUM COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1004/2017 STEP NO--UR/0080/70/043/004/0831/0885
CIRC ACCESSION NO--AP0132278
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132278

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. CURVE OF THE TERNARY SYSTEM CONSISTED OF 2 BRANCHES. OF THESE THE 1ST CORRESPONDED TO THE CRYSTN. OF ANHYD. NA SUB2 H SUB2 Y. THE 2ND BRANCH OF THE CURVE APPEARED WITH AN INCREASE IN THE KOH CONTENT AND CORRESPONDED TO THE CRYSTN. OF 2KOH.NA SUB2 H SUB2 Y. THIS SOLID PHASE CONTAINED KOH 25 AND NA SUB2 H SUB2 Y 75 WT. PERCENT. A THERMOGRAPHIC ANAL. OF THE SALT NA SUB2 H SUB2 Y.2H SUB2 O HAD ENDOTHERMIC EFFECTS AT 104, 192, AND 243DEGREES. THE 1ST 2 WERE CAUSED BY THE LOSS OF 2 MOLS. OF H SUB2 O AND AT 243DEGREES THE COMPD. BEGINS TO DECOMP. THE DTA CURVE OF ANHYD. NA SUB2 H SUB2 Y SHOWED ENDOTHERMIC PEAKS AT 81 AND 198.6DEGREES AND AT 350DEGREES THE COMPD. BEGINS TO DECOMP. THE DTA CURVE FOR 2KOH.NA SUB2 H SUB2 Y IS VERY COMPLEX AND IS AS YET NOT NOT RESOLVED.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--P SUB2 O SUB5 MINUS SB SUB2 O SUB3 R SUBX O SUBY SYSTEMS (R EQUALS
CR, V, TI, FE). III. PHOSPHORUS PENTOXIDE AND ANTIMONY SESQUIOXIDE -U-
AUTHOR--(05)-DOMBROVSKAYA, V.K., MILLERS, T., KONSTANTS, Z., VAYVADS, A.,
VITINA, I.
COUNTRY OF INFO--USSR
SOURCE--LATV. PSR. ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 10-14
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--THERMAL EFFECT, CHEMICAL SYNTHESIS, ELECTRICAL CONDUCTIVITY,
ANTIMONY COMPOUND, PHOSPHORUS COMPOUND, CHROMIUM COMPOUND, VANADIUM
COMPOUND, TITANIUM COMPOUND, IRON COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0610 STEP NO--UR/0464/70/000/001/0010/0014
CIRC ACCESSION NO--AP0105593
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105593

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NH SUB4 H SUB2 PO SUB4 USED TO PREP. THE SPECIMENS HAD ONLY 1 ENDOTHERMIC EFFECT, AT SIMILAR TO 200DEGREES. AT THIS POINT THE ELEC. COND. INCREASED SHARPLY. ABOVE THIS TEMP. THE PHOSPHATE GRADUALLY DECOMPD. GIVING OFF NH SUB3 AND H SUB2 O. THE ENDOTHERMIC EFFECT AND THE SHARP INCREASE OF COND. WERE THE RESULT OF FUSION. BEYOND THE PEAK A NEW SOLID SUBSTANCE FORMED AND THE ELEC. COND. DROPPED TO ITS ORIGINAL VALUES. THE SB SUB2 O SUB3 UPON HEATING HAD 1 EXOTHERMIC EFFECT, AT 570-580DEGREES, CAUSED BY OXIDN. OF SB SUB2NEGATIVE O SUB3 TO SB SUB2 O SUB4. HEATING A MIXT. OF P SUB2 O SUB5 MINUS SB SUB2 O SUB3 TO 300DEGREES RESULTED IN THE FORMATION OF A COMPD. CORRESPONDING TO SB SUB2 O SUB3 TIMES P SUB2 O SUB5. THIS SUBSTANCE REMAINED CRYST. UP TO 1400DEGREES.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--P SUB2 O SUB5 AND SB SUB2 O SUB3 R SUBX O SUBY SYSTEM (R EQUALS CR,
V, TI, FE). IV. PHOSPHORUS PENTOXIDE, ANTIMONY SESQUIOXIDE AND FERRIC
AUTHOR--(04)--DOMBROVSKAYA, V.K., KONSTANTS, Z., MILLERS, T., VAYVADS, A.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 15-18

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--PHOSPHOROUS COMPOUND, X RAY ANALYSIS, ANTIMONY COMPOUND,
CHROMIUM COMPOUND, VANADIUM COMPOUND, TITANIUM COMPOUND, IRON OXIDE,
GLASS STRUCTURE, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1988/0611

STEP NO--UR/0464/70/000/001/0015/0018

CIRC ACCESSION NO--AP0105594

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105594

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TERNARY SYSTEM WAS STUDIED AT 1000, 1200, AND 1400DEGREES BY X RAY AND THERMOGRAPHIC ANAL. AT 1000DEGREES A GLASS WAS FORMED ONLY WHEN THE COMPN. WAS P SUB2 O SUB5 60, SB SUB2 O SUB3 20, AND FE SUB2 O SUB3 20 MOLE PERCENT. AT 1200DEGREES, 3 X RAY AMORPHOUS SUBSTANCES WERE OBTAINED CONTG. (1) P SUB2 O SUB5 60, SB SUB2 O SUB3 20, AND FE SUB2 O SUB3 20 MOLE PERCENT; (2) P SUB2 O SUB5 60 AND FE SUB2 O SUB3 40 MOLE PERCENT; AND (3) P SUB2 O SUB5 70, SB SUB2 O SUB3 10, AND FE SUB2 O SUB3 20 MOLE PERCENT. AT 1400DEGREES AN X RAY AMORPHOUS COMPN. EXTENDED OVER MORE THAN HALF OF THE 3 COMPONENT SYSTEM. WITHIN THIS SYSTEM FUSION OCCURRED ONLY IF THE FE SUB2 O SUB3 IN THE MIX DID NOT EXCEED 40 MOLE PERCENT AND THE P SUB2 O SUB5 CONTENT WAS GREATER THAN OR EQUAL TO 20 MOLE PERCENT.

UNCLASSIFIED

USSR

UDC 546.72 + 547.1'3 + 547.384

DOMBROVSKIY, A. V., and VITTAL', E. E., Chernovtsy State University

"Ferrocenalddehyde and β -Ferrocenylacrolein Cyanohydrines"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, pp 1982-1983

Abstract: Ferrocenalddehyde reacts exothermally and almost instantaneously with acetonecyanohydrine in methanol and in presence of K_2CO_3 yielding crystalline ferrocenalddehyde cyanohydrine (I), m.p. 101-102°. Analogously the cyanohydrine of β -ferrocenylacrolein (II), m.p. 105-106° has been obtained from respective starting materials, the reaction being somewhat slower. IR spectral data of these products are reported. Neither (I) nor (II) could be hydrolyzed with acid or base hydrolysis.

1/1

USSR

UDC 547.558.1

VOLYNSKAYA, Ye. M., SHEVCHUK, M. I., and DOMBROVSKIY, A. V., Chernovits State University

"Monophosphonium Salts and Monophosphoranes Based on 4-4'diacetyldiphenyl and its Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 5, 1972, pp 986-992

Abstract: A study was made of syntheses based on 4-acetyl-4'-(α -bromacetyl) derivatives of the diphenyl, diphenylmethane, diphenylethane, diphenyl sulfide, and diphenylsulfoxide of monophosphonium salts and monophosphoranes which contain an acetyl radical whose carbonyl group is not connected with the P=C ylid bond. Five phosphonium salts were synthesized through the reaction of the above derivatives with triphenylphosphine and subsequent loss of HBr. The products had the general structure $H_2NCONHN=C(CH_3)C_6H_4XC_6H_4COCH=PPh_3$ where $X = CH_2, CH_2CH_2, S, \text{ and } SO_2$. Physical data and elemental composition for the synthesized compounds are given in several tables along with preparations and IR and UV spectra.

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USSR

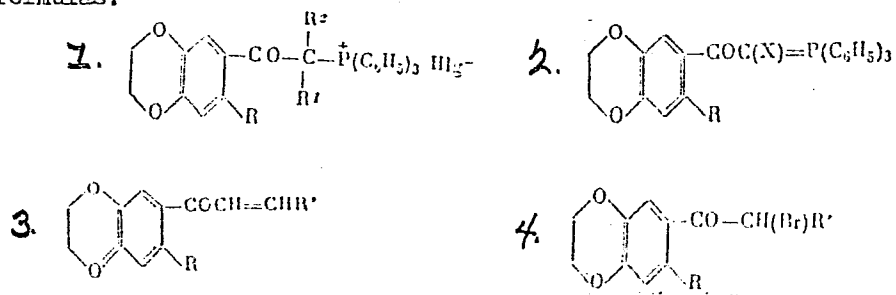
UDC 547.558.1

ANTONYUK, A. S., SHEVCHUK, M. I., and DOMBROVSKIY, A. V., Chernovits State University

"Phosphonic Salts and Phosphoranes Containing the 6-Carbobenzodioxane. Alkylidene Radical."

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 8, 1972, pp 1706-1714

Abstract: Thirty-six compounds were prepared having one of the following general formulas:

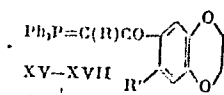


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USSR

ANTONYUK, A. S., et al., Zhurnal Obshchey Khimii, Vol 42(104), No 8, 1972, pp 1706-1714

Synthesis involved the reaction of Br_2 with 6-acetylbenzodioxane-1,4,6-acetyl-7-ethylbenzodioxane-1,4 and 6-propionylbenzodioxane-1,4 to form the α -bromoketone. This was reacted with triphenylphosphine to form the phosphonium salt. Reaction with $\text{C}_2\text{H}_5\text{ONa}$ and dehydrobromination resulted in the formation of



This was the starting material from which other derivatives were prepared by reaction with $\text{C}_6\text{H}_5\text{ICl}_2$, BrI , RCOCl and others. Elemental analysis, physical data and a few UV spectra are given.

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USSR

UDC 547.558.1:621

SHEVCHUK, M. I., VOLYNSKAYA, YE. M., and DOMBROVSKIY, A. V., Chernovtsy State University

"Synthesis and Investigation of the Reactivity of Mono- and Bis- β -ketophosphoranes Containing Polynuclear Noncondensed Aromatic Radicals"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 1047-1053

Abstract: Mono- and bis- β -ketophosphoranes with polynuclear noncondensed aromatic radicals in the alkylidene portion of the molecule were obtained by dehydrobromination of mono- and bis- β -ketophosphonium salts. It has been shown that on chlorination, bromination and iodination these types of phosphoranes form respective α -halosubstituted β -ketophosphoranes. It has been established that these phosphoranes $[RC_6H_4COCH=PPh_3]$ react with p-nitrobenzyl and cinnamic acid chlorides forming α -acylated addition products, and with acetyl chloride they form O-acylated phosphonium chlorides.

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USSR

UDC 547.341

SHEVCHUK, M. I., KHALATURNIK, M. V., and DOMBROVSKIY, A. V., Chernovtsi State University

"IR Spectra and Chemical Structure of Aroylcarbomethylenetriphenylphosphoranes and Aroylcarbomethyltriphenylphosphonium Bromides"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2630-2634

Abstract: Investigation of the IR spectra of methyl aryl α -diketones, aroylcarbomethylenetriphenylphosphoranes, aroylcarbomethyltriphenylphosphonium bromides, aroylcarbomethylene- γ -oximetriphenylphosphoranes and aroylcarbomethyl- γ -oximetriphenylphosphonium bromides showed that the β -carbonyl groups of the aroylcarbomethylenetriphenylphosphoranes are conjugated with the P:C double bond. The γ -carbonyl group on the other hand is not conjugated with P:C and therefore participates in reactions characteristic of the carbonyl group. The β -carbonyl group of aroylcarbomethylene- γ -oximetriphenylphosphoranes, in spite of the conjugation with the P:C bond, forms hydrogen bonds with the hydroxyl group hydrogen of the γ -oxime function. This ability is retained even upon transition from γ -oximephosphoranes to their hydrobromides (phosphonium salts).

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USSR

UDC 547.448'558.1

KHALATURNIK, M. V., SHEVCHUK, M. I., and DOMBROVSKIY, A. V.

"Aroylcarboalkylenyl-gamma-oximetriphenylphosphorans"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 5, May 72, pp 992-995

Abstract: The reaction of aroylcarboalkylenyltriphenylphosphorans with hydroxylamine and 2,4-dinitrophenylhydrazine forms aroylcarboalkylenyl-gamma-oximetriphenylphosphorans and aroylcarboalkylenyl-gamma-(2,4-dinitrophenylhydrazone)triphenylphosphorans, respectively. It was found that aroylcarboalkylenyl-gamma-oximetriphenylphosphorans $[ArC(=NOH)COC(R)-PPh_3]$ are capable of entering into the Wittig reaction with aldehydes. With hydrogen bromide they form bromides of aroylcarboalkylenyl-gamma-oximetriphenylphosphonium. The results are summarized in a table. Ultraviolet spectra are given.

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USSR

UDC 547.836:661.718.1'

SHEVCHUK, M. I., ANTONYUK, A. S., and DOMBROVSKIY, A. V., Chernovtsy State University

"Phosphonium Salts and Phosphoranes With Condensed Aromatic Rings in the Alkylidene Part of the Molecule"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, pp 1696-1701

Abstract: The article describes the synthesis of new phosphonium bromides and phosphoranes containing such aroyl radicals as 2- and 3-carbophenanthryl, 5-carboacenaphthenyl and 4,7-dicarboacenaphthenylene in the alkylidene part of the molecule. Bromination of 2- and 3-acetylphenanthrene, 9-acetylanthracene, 5-acetyl- and 4,7-diacetylacenaphthene in an ether-dioxane solution gives respectively 2- and 3-bromoacetylphenanthrenes, 9-bromoacetylanthracene, 5-bromoacetylacenaphthene and 4,7-bisbromoacetylacenaphthene. The resultant bromoketones react with triphenylphosphine to give phosphonium bromide salts. The latter are readily dehydrobrominated to give new aroylmethylenetriphenylphosphoranes. The Wittig reaction of the latter with p-nitrobenzaldehyde and 9-anthraldehyde gives α, β -unsaturated ketones containing condensed aromatic rings.

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USSR

UDC 547.446

SHEVCHUK, M. I., SHPAK, S. T., and DOMBROVSKIY, A. V., Chernovtsy State University

" ω -Halo- ω -isonitrosoacetophenones and Their Conversion to Aroylcyanides by Reactions With Triphenylphosphine"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 5, May 71, pp 1004-1007

Abstract: Reaction of bromomethylarylketones with alkyl nitrites and gaseous HCl or HBr gives good yields of ω -chloro- or ω -bromo- ω -isonitrosoacetophenones. Nitrosyl chloride formed in this reaction from isopropyl nitrite and HCl reacts with ω -bromo- ω -isonitrosoacetophenones replacing the ω -bromine with a chlorine atom to yield their ω -chloro derivatives. The products obtained are stable crystalline materials, soluble in common organic solvents. Heating equimolar amounts of ω -chloro derivatives with triphenylphosphine (TPP) results in a vigorous exothermic reaction leading to the formation of TPP oxide and aromatic ketoacid nitriles. The ω -bromo derivatives react much less vigorously in this reaction.

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USSR

UDC 547.241:231

SHEVCHUK, M. I., VOLYNSKAYA, Ye. M., and DOMBROVSKIY, A. V., Chernovtsy State University

" α -Nitrosation of Phosphonium Salts -- a New Method of Synthesizing Nitriles"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1199-2004

Abstract: Earlier research indicates that hydrogen atoms at an ylid carbon atom in phosphonium salts and phosphoranes are capable of electrophilic substitution. The reaction of phosphonium salts with alkyl nitrites in the presence of hydrogen chloride results in the nitrosation of ylid carbon atoms to form α -nitrososubstituted phosphonium salts. Dehydrochlorination of α -nitrososubstituted salts yields nitriles and triphenylphosphine oxide. Dehydrochlorination of carbethoxy- α -nitrosomethyltriphenylphosphonium chloride yields carbethoxy- α -nitrosomethylenetriphenylphosphorane. The yields and other properties of the new 12 compounds are presented in tabular form.

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USSR

UDC: 547.341

SHEVCHUK, M. I., TOLOCHKO, A. F., and DOMBROVSKIY, A. V., Chernovtsy State University

"Alpha-Substituted Alkoxy-carbonylmethylenetriphenylphosphoranes." New Reactions of Phosphoranes with Phenylglyoxal

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 57-66

Abstract: Twelve crystalline alpha-substituted carbomethoxy- and carbethoxymethylenetriphenylphosphoranes were prepared by transacylation, with formation of intermediate phosphonium salts. Thus, treating carbomethoxy- or carbethoxymethylenetriphenylphosphoranes (Ia or Ib) with iodine bromide in chloroform with cooling gave oily phosphonium salts which with saturated sodium carbonate, gave 91-92% yields of alpha-iodinated Ia or Ib. The latter exchanged iodine for the thiocyanate group in the reaction with potassium thiocyanate in methanol to give a 73% yield of the alpha-thiocyanate analogs, previously unknown. Heating Ib with allyl bromide or methyl bromoacetate in benzene yielded crystalline carbethoxymethyltriphenylphosphonium bromide (II) and alpha-allyl- or alpha-carbomethoxymethyl-substituted Ib. Similarly, adding benzyl iodide to a boiling solution of Ia or Ib in anhydrous ethyl acetate gave crystalline iodine analogs of II, while the filtrates gave 86-84.7%

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SHEVCHUK, M. I., et al, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 57-66

yields of alpha-benzyl-substituted Ia and Ib, respectively. Ia and Ib reacted similarly with acyl chlorides in benzene to give chlorine analogs of II and 73-97% yields of alpha-acyl-substituted Ia and Ib, where acyl is alpha-toluy, benzoyl, p-nitrobenzoyl, or 2-furoyl. The exothermic reactions of Ia, Ib, alpha-carbomethoxy methyl-substituted Ib, or alpha-benzyl-substituted Ia and Ib with phenylglyoxal gave triphenylphosphine and ketoesters: methyl and ethyl beta-benzoylacrylates, ethyl alpha-carbomethoxymethyl-(III), methyl alpha-benzyl-, and ethyl alpha-benzyl-(IV)beta-benzoylacrylates, respectively. Crystalline carbomethoxy-3-carbomethoxy-5-phenyl- and 3-carbomethoxy-2,5-diphenyl-2,3-dihydrofuranes were obtained in 32-33% yields by distillation in vacuo of III and IV, respectively. The above beta-benzoylacrylates except IV were identified by the melting points of their 2,4-dinitrophenylhydrazones. The ketoesters differed from dihydrofurane derivatives with respect to their IR and UV spectra.

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USSR

UDC: 547.558.1

SHEVCHUK, M. I., VOLYNSKAYA, Ye. M., and DOMBROVSKIY, A. V., Chernovtsy State University

"Acylalkylenyltriphenylphosphoranes"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 48-57

Abstract: Stable crystalline (acylalkyl)triphenylphosphonium bromides (I) and title compounds (II) are derived from aliphatic alpha-bromoketones. Three I were prepared by heating bromoacetone, alpha-bromoethyl methyl or alpha-bromomethyl isobutyl ketones with triphenylphosphine in toluene. Treating I with sodium ethoxide in ethanol for twelve hours gave the corresponding compounds II. Alpha-halosenated acetyl- and trimethylacetylmethylenetriphenylphosphoranes were obtained by treating the corresponding II with iodobenzene dichloride, bromine, or iodine bromide. Alpha-iodinated II easily react with potassium thiocyanate to give alpha-thiocyanosubstituted II. The alpha-acylsubstituted analogs of the above halogenated phosphoranes were prepared by transacylation of II. Compounds II formed O-acyl(acetyl or benzoyl)triphenylphosphoniumalkene chlorides (III) with acetyl or benzoyl chlorides. The III salts are easily converted by sodium ethoxide to the corresponding original II phosphoranes in 100% yields. Acylphosphoranes II reacted on

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SHEVCHUK, M. I., et al, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 43-57

heating with p-nitrobenzaldehyde and with phenylglyoxal to give α, β -unsaturated ketones. The acylphosphoranes described above exhibited characteristic IR and UV spectral bands.

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USSR

UDC 547.341

SHEVCHUK, M. I., TOLOCHKO, A. F., and DOMBROVSKIY, A. V., Chernovtsy State University

"Aroyl- α (p-nitrobenzyl)methylenetriphenylphosphoranes"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 3, Mar 71, pp 540-545

Abstract: The reaction of aroylmethylenetriphenylphosphoranes with p-nitrobenzyl bromide gave a series of aroyl- α -(p-nitrobenzyl)methylenetriphenylphosphoranes (I). Analogously, starting with carbomethoxymethylenetriphenylphosphorane and p-nitrobenzyl bromide, the carbomethoxy- α -(p-nitrobenzyl)-methylenetriphenylphosphorane (II) was obtained. Aroyl- α -(p-nitrobenzyl)-methyltriphenylphosphonium bromide and aroyl- α -chloro- α -(p-nitrobenzyl)-methyltriphenylphosphonium chloride were obtained from the reaction of α -p-nitrobenzyl substituted aroylmethylenetriphenylphosphoranes with hydrogen bromide and phosphorus pentachloride. It was shown that (I) does not react with carbonyl compounds. Reaction of (II) with phenylglyoxal gave the methyl ether of α -(p-nitrobenzyl)- β -benzoylacrylic acid.

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USSR

UDC 547.341

SHEVCHUK, M. I., ANTONYUK, A. S., DOMBROVSKIY, A. V., Chernovtsy State University, Chernovtsy, Ministry of Higher Education Ukrainian SSR

"Synthesis of Phosponium Salts and of Phosphoranes From 2-Acetyldibenzofurane"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1717-1725

Abstract: Reacting bromomethyl-2-dibenzofuraneketone with triphenylphosphine yields 2-carbodibenzofuranemethyltriphenylphosphonium bromide, which is dehydrobrominated to 2-carbodibenzofuranemethylene-triphenylphosphorane (I). In turn, (I) was reacted with iodobenzylchloride, bromine, bromiodine, and acyl chlorides of the chloroacetic, phenylacetic, p-nitrobenzoic, cinnamic, and pyromucic acids, yielding nine α -substituted phosphoranes with the dibenzofurane radical. The chloro-, bromo-, and iododerivatives of (I) form phosphonium iodides with ethyl iodide -- 2-carbodibenzofuranemethyl-halidomethyltriphenylphosphonium iodides, which are capable of under-1/2

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SHEVCHUK, M. I., et al, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1717-1725

going an exchange reaction with lead acetate, replacing the iodine anion by the acetate anion. IR and UV spectra of representative products are reported; physical properties are tabulated.

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Acc. Nr:

AP0049511

Abstracting Service:

CHEMICAL ABST.

5-70

Ref. Code:

48 0039

100818c α -Substituted alkoxycarbonylmethylenetriphenylphosphoranes. New reactions of phosphoranes with phenylglyoxal. Shevchuk, M. I.; Tolochko, A. F.; Dombrovskii, A. V. (Chernovits. Gos. Univ., Chernovitsy, USSR). *Zh. Obshch. Khim.* 1970, 40(1), 57-66 (Russ). Adding 0.114 mole freshly prepd. IBr in 15 min to 0.114 mole $\text{Ph}_3\text{P}:\text{CHCO}_2\text{R}$ (Ia) in CHCl_3 with ice cooling gave after 30 min an oily phosphonium salt, which, with satd. Na_2CO_3 20 min, gave $\text{Ph}_3\text{P}:\text{CXCO}_2\text{R}$ (X = I, R = Me), m. 165.5-6.0°; similarly was prepd. the R = Et analog, m. 134-5°. The former and KCNS in MeOH gave the analog with X = CNS, R = Me, m. 166-6.5°; similarly was prepd. 73% analog (CNS, Et) m. 140-1°. Heating 3.4 g $\text{BrCH}_2\text{CH}:\text{CH}_2$ 7 hr with 19.5 g $\text{Ph}_3\text{P}:\text{CHCO}_2\text{Et}$ in C_6H_6 gave 78% $\text{Ph}_3\text{PCH}_2\text{CO}_2\text{Et}:\text{Br}$ (I), while the filtrate, freed of C_6H_6 and taken up in EtOAc, gave in 1 day at room temp. 62.5% $\text{Ph}_3\text{P}:\text{C}(\text{CH}_2\text{CH}:\text{CH}_2)\text{CO}_2\text{Et}$, m. 119-20°. $\text{Ph}_3\text{P}:\text{CHCO}_2\text{Et}$ and $\text{BrCH}_2\text{CO}_2\text{Me}$ heated 4 hr in C_6H_6 gave 84% I and 80.5% $\text{Ph}_3\text{P}:\text{C}(\text{CH}_2\text{CO}_2\text{Me})\text{CO}_2\text{Et}$ m. 133-4°. Similar reaction of Ia with PhCH_2I in hot EtOAc in the absence of moisture gave 92-3% iodide analog of I (or its methoxy analog), while the filtrates gave $\text{Ph}_3\text{P}:-$

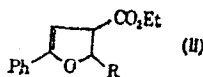
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$C(CH_2Ph)CO_2R$ ($R = Me$, 86%, m. 187-8°; $R = Et$, 84.7%, m. 143-4°). Similar reaction with acyl chlorides in C_6H_6 gave 80-98% I or its EtO analog, and 73-96% $Ph_3P:CXCO_2R$ (X, R and m.p. shown): $PhCH_2CO$, Et, 137-8°; Bz , Et, 136-7°; $p-O_2NC_6H_4CO$, Me, 198.5-5-9°; 2-furoyl, Et, 112-13°. Treating the unsatd. phosphorane, Ia, and its analogs above, with phenylglyoxal (10% excess) gave Ph_3PO and $BzCH:CXCO_2R$ (X and R shown): H , Me, 63.7%, m. 32-3°; $PhCH_2$, Me, 89.5%, m. 62-2.5°; H , Et, 50%, b₁ 147-8°, n_D^{20} 1.5490; $PhCH_2$, Et, 22%, b₁ 227-9°; MeO_2CCH_2 , Et, 20%, b₁ 196-7°, n_D^{20} 1.5510. The last 2 esters on being distd. cyclize to 33% II ($R = Ph$) b₁ 230-5°, m. 148-9°; and 32% II ($R = CO_2Me$), m. 78-9°, b₁ 190-210°. The following 2,4-dinitrophenylhydrazones were prepd. from the above benzoylacrylates and dinitrophenylhydrazine in aq. H_2SO_4 : $EtOH$ and $BzCH:CXCO_2R$ (X, R , and m.p. shown): H , Me, 161.5-2.5°; $PhCH_2$, Me, 156-7°; H , Et, 167.5-9°; MeO_2-



CCH_2 , Et, 166.5-7.5°.

G. M. Kosolapoff

19801364

Acc. Nr.

AP0049517

Abstracting Service:
CHEMICAL ABST. 5170

Ref. Code:

UR 0079

100817b Acylalkylenetriphenylphosphoranes. Shevchuk, M.
L. Volynskaya, E. M.; Dombrovskii, A. V. (Chernovits.
Gos. Univ., Chernovitsy, USSR). Zh. Obshch. Khim. 1970, 40-
(1), 48-57 (Russ). Heating 6.9 g BrCH₂Ac and 13.5 g Ph₃P in
MePh 2 hr gave 82% Ph₃PCH₂AcBr, m. 212-14°, while the fil-
trate gave Ph₃PO. Similar reaction of AcCHBrMe gave 66%
Ph₃PCHMeAcBr, m. 221-2.5°, and some Ph₃PO; BrCH₂CO-
CH₂Me₂ similarly gave 82% Ph₃PCH₂COCHMe₂Br, m. 217-
19°. Similarly were prepd. Ph₃PCHR¹CORBr (% yield, R, R¹,
and m.p. shown): 80, Me, H, 234-6°; 55, CMe₃, H, 233-4°;
97, Me, Br, 127-30°; 97, Me, I, 113-15°; 99, CMe₃, Br, 105.5-
7.0°; 84, CMe₃, I, 185-7°. Treating the above onium salts with
EtONa in EtOH overnight gave RCOCR¹:PPh₃ (I) (R, R¹, and
m.p. shown) in 65-95% yields: Me, H, 200-2°; Me, Me, 170.5-
1.5°; CMe₃, H, 181-2°; Me, Cl, 162-3°; Me, Br, 144.5-6.0°;
Me, I, 146-7°; Me, CNS, 148-9°; Me₂C, Cl, 114-16°; Me₂C,
Br, 140-1.5°; Me₂C, I, 164.5-6°; Me₂C, CNS, 143-3.5°; Me₂C,
MeOCH₃, 98-101°; Me, p-O₂NC₆H₄CO, 139-41°; Me, PhCH₂-
CO, 76.5-8°; Me, PhCH:CHCO, 187-9°; Me, 2-furoyl, 191-
3°; Me₂C, p-O₂NC₆H₄CO, 141-3°; Me₂C, PhCH₂CO, 72-4°;
Me₂C, PhCH:CHCO, 169-71°; Me₂C, 2-furoyl, 174-5°. I
(R = Me, R¹ = Cl, Br, I, CNS) are easily interconvertible
through normal ion-exchange reactions. I (R = Me or Me₂C;
R¹ = H), react with acyl halides to form the analogs with R =
Me or Me₂C and R¹ = acyl groups shown above, in a transacyla-
tion reaction. Thus Ph₃P:CHAc (6.2 g) and 2.4 g Et₃N in

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CHCl_3 at $8-10^\circ$ treated 2 hr with 6 g PhICl_2 gave $\text{Ph}_3\text{P}:\text{CClAc}$ described above, while bromination in CCl_4 gave the brominated analog described above; treating AcCHBrPPh_3 with KOH in aq. MeOH 2.5 hr gave AcCBr:PPh_3 described above; similarly was prepd. the Me_2C analog. The iodinated analogs were also prepd. from the phosphonium salts and aq. Na_2CO_3 in $\text{Me}_2\text{NC-HO}$. Reactions of acyl chlorides with the unsatd. phosphoranes were run in refluxing C_6H_6 10-15 min or several hr at room temp. $\text{Me}_2\text{CCOCH:PPh}_3$ and MeOCH_2Cl gave in EtOAc $\text{Me}_2\text{CCO}^-(\text{CH}_2\text{OMe})\text{:PPh}_3$ identical to the above described. Adding to 3 g AcCH:PPh_3 in C_6H_6 over 20 min, 0.6 g AcCl in C_6H_6 gave in 1 hr $\text{RCO}_2\text{CR}^1\text{:CHPPh}_3\text{Cl}$ ($\text{R} = \text{Me} = \text{R}^1$), m. $239-41^\circ$; similarly were prepd. the analogs (R, R^1 , and m.p. shown: Me, CMe_3 , $230-1^\circ$; Ph, Me , $96-7^\circ$; Ph, CMe_3 , $92-3^\circ$). These salts with EtONa-EtOH 2-3 hr gave 100% corresponding unsatd. phosphoranes described above. Treating a slight excess of phenylglyoxal with the unsatd. acylphosphoranes gave overnight RCO-CX:CHR^1 ($\text{R}, \text{X}, \text{R}^1$, and m.p. shown) in 50-3% yields: $\text{Me}, \text{H}, \text{Bz}$, $130-1^\circ$; $\text{Me}, \text{Me}, \text{Bz}$, $145-7^\circ$; $\text{CMe}_3, \text{H}, \text{Bz}$, $150-7^\circ$. Heating the unsatd. acylphosphoranes with $p\text{-O}_2\text{NC}_6\text{H}_4\text{CHO}$ in Me^nh 6 hr gave the analogs ($\text{R}, \text{X}, \text{R}^1$, and m.p. shown): $\text{Me}, \text{H}, p\text{-O}_2\text{NC}_6\text{H}_4$, $103.5-6^\circ$; $\text{Me}, \text{Me}, p\text{-O}_2\text{NC}_6\text{H}_4$, $88-91^\circ$; $\text{CMe}_3, \text{H}, p\text{-O}_2\text{NC}_6\text{H}_4$, $99-101.5^\circ$; $\text{Me}, \text{Br}, p\text{-O}_2\text{NC}_6\text{H}_4$, $96-7^\circ$; $\text{CMe}_3, \text{Br}, p\text{-O}_2\text{NC}_6\text{H}_4$, $87-9^\circ$. Uv and ir spectra are shown.

G. M. Kosolapoff

19801379

1/2 - 010
UNCLASSIFIED
TITLE--REACTION OF DIARYLETHYLENES WITH HYDRAZINE HYDRATE AND
O-PHENYLENEDIAMINE -U-
AUTHOR-(03)-SHEVCHUK, M.I., TOLOCHKO, A.F., DOMBROVSKIY, A.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1108-13
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--NUCLEAR MAGNETIC RESONANCE, ISOMER, BENZENE DERIVATIVE,
HYDROGEN BONDING, ORGANIC AZO COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1278
CIRC ACCESSION NO--AP0134952
STEP NO--UR/0366/70/006/005/1108/1113
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134952

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NMR SPECTRA OF CIS AND TRANS ISOMERS OF BZCH:CHBZ (I) SHOWED THAT THERE IS NO H BONDING BETWEEN CO GROUPS AND THE H OF THE CH CH GROUP. THE REACTION OF TRANS I WITH N SUB2 H SUB4.H SUB2 O GAVE 3,PHENYL,6,(R,SUBSTITUTED),PYRIDAZINE (R EQUALS PH) (II). SIMILARLY OTHER II (R EQUALS 4,MEC SUB6 H SUB4, 4,MEOC SUB6 H SUB4, 4,CLC SUB6 H SUB4, 4,BR, C SUB6 H SUB4, OR BETA,NAPHTHYL) WERE PREPD. HEATING O,H SUB2 NC SUB6 H SUB4 NH SUB2 WITH TRANS,BZCH:CHR (R AS ABOVE) GAVE 2,PHENYL,5,(R,SUBSTITUTED), 1,6,BENZODIAZOCINES.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SYNTHESIS OF 5,ARYL,2,4,PENTADIENALS AND 5,ARYL,2,4,6,HEPTADIENIC
ACIDS -U-
AUTHOR-(04)-~~LEMBROVSKIY~~, A.V., PRIBYTKOVA, L.G., GANUSHCHAK, N.I.,
~~VENGRZHANOVSKIY~~, I.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 964-7
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SAPONIFICATION, PHOSPHATE ESTER, BENZENE DERIVATIVE, AMINE
DERIVATIVE, CARBOXYLIC ACID, CHLORINATED ORGANIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1317

STEP NO--UR/0366/70/006/005/0964/0967

CIRC ACCESSION NO--AP0144991

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134091

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE REACTION IN THE COLD OF SC SUB6
H SUB4 CH:CHCH:CH SUB2 WITH POCL SUB3NEGATIVE HCOAME SUB2 MIXT. IN
TETRAHYDROFURAN GAVE 30-37PERCENT XC SUB6 H SUB4 CH:CHCH:CHCH (I,X
EQUALS H, P, ME, P, MED, C, CL, OR P, CL). THE REACTION OF I WITH (ETO) SUB2
P(O)CHNACO SUB2 ET GAVE 61-96PERCENT XC SUB6 H SUB4 CH:CHCH:CHCH:CHCO
SUB2 ET WHICH WAS SAPOED. TO THE CORRESPONDING ACID. FACILITY:
CHERNIGOV. GGS. UNIV., CHERNIGOV, USSR.

UNCLASSIFIED

USSR

UDC 547.558.1

SHEVCHUK, M. I., KHALATURNIK, M. V., and DOMBROVSKIY, A. V., Chernovt'si State University

"Mechanism of the Formation of Phosphonium Salts. α -Alkyl- β , γ -diketophosphonium Salts and Phosphoranes"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 4, Apr 73, pp 758-763

Abstract: It has been established that α -bromoketones reacted with triphenylphosphine form initially an enolphosphonium salt and an ionic pair, eventually converting to the stable quaternary phosphonium salt. The formation of β , γ -diketophosphonium salt from bromoalkylaryl- α -diketones and triphenylphosphine goes through only one intermediate stage -- through the ionic pair. With triphenylphosphine, bromoalkylaryl- α -diketones -- Ar-CO-CO-CH(Br)-R ($\text{R} = \text{CH}_3, \text{C}_2\text{H}_5, \text{C}_3\text{H}_7$) -- form α -substituted β , γ -diketophosphonium bromides which upon treatment with aqueous solution of sodium carbonate convert easily to the respective β , γ -diketo- α -alkyltriphenylphosphoranes. The latter reacting via the Wittig reaction yield unsaturated polyoxo compounds.

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USSR

UDC: 539.374

DOMBROVSKIY, G. A., TURCHENKO, V. Ya.

"Concerning the Dilatational Wave"

Moscow, Doklady Akademii Nauk SSSR, Vol 204, No 5, Jun 72, pp 1061-1064

Abstract: The paper deals with the problem of propagation of a dilatational wave in a cylindrical (prismatic) semi-infinite elastic-plastic rod. A study is made of the asymptotic behavior of the solution at large time values and at great distances from the end of the rod.

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DOMBROVSKIY, L.S.

SO. 5175 53354

6 Apr 72

APPLICATION OF BIOTELEMETRY FOR RESEARCH IN
THE PHYSIOLOGY OF LABOR AND SPORTS
EQUIPMENT FOR STUDYING PHYSICALLY MOVING PEOPLE¹

R. V. Lushin, L. S. Dombrovskiy

Research Characteristics

pp 103-115

On proceeding to a brief description of the procedure and apparatus permitting biotelemetric observations of freely moving people, it is necessary to point out that there are still no industrial devices for this purpose corresponding to the above-discussed requirements. The first Soviet biotelemetric device mastered by our industry -- the T-11-1 telemetric station -- must, in connection with its weight, be considered as an instrument used to study the physiology of labor. For lack of any other device, it was used in a number of studies of the physiology of sports (V. V. Matov, 1960; L. I. Koyasov, V. V. Matov, 1962).

However, at the present time only instruments for determining the pulse rate, recording electrocardiograms and recording movements have entered stably into research practice. Of course, out of all the functional indexes, the pulse rate primarily attracts the physiologist and doctor of sports medicine during observations of man under natural conditions of muscular activity. The cardiac rhythm is exceptionally dynamic and closely related to the neuro-humoral regulatory system of the whole organism. Therefore, it can reflect the intensity of physiological stress and shifts during the course of work (V. V. Rozentlat, 1961, 1962; Darr, 1961, et al.). It is no accident that in recent years interest has risen in various technical pulse rate analyzers. Special surveys (Monod, 1960) have been devoted to the methods of studying this index.

Various display methods have been proposed for radiotelemetry of the cardiac rhythm: by heart tones (Seelig, 1955), by variations in filling of the concha auricular with blood recorded by a photoelectric sensor (L. P. Shvabov, 1959; Harton, Koronai, 1961, et al.), by the bioelectricity of the heart (the majority of papers). As applied to the studies of sportsmen and laborers, only the last procedure has been implemented. Its advantages over

¹Data presented by L. S. Shakhin are used in this chapter.

DOMBROVSKIY, L.S.

PHYSIOLOGY

3 JPRS 55354
06 MAR 72

APPLICATION OF BIOTHEMISTRY IN PHYSIOLOGY OF LABOR AND SPORTS

V. V. NERENKOV, L. S. DOMBROVSKIY

pp 136-145

Biotechnology in the Physiology of Labor

The physiology of labor is one of the basic fields of applied physiology. Efficient construction of labor activity, which plays the most important role in the life of man and represents his primary social function, is not possible without a detailed study of the laws controlling the course of the physiological processes during work and under the stress of work. Recognition of these laws is important from several points of view.

First, it provides a physiological basis for scientific organization of production -- from selection of the working movements to regulation of labor and rest conditions. The physiology of labor is closely connected with the technological process, the organization of production and economics, and biomedical competence in a number of areas turns out to be necessary for the engineer and the economist.

Secondly, studies of functional entities give an idea not only of the nature of the work performed but also of the conditions of the production environment. In this respect, the given division of physiology is closely connected with the hygiene of labor, and physiological procedures are important tools for the hygienist in his studies.

Thirdly, physiological observations permit judgment of the nature of the course of certain pathological processes and deviations under the conditions of professional activity. Therefore, studies of the physiology of labor provide the solution of a number of problems of professional pathology and industrial disease (findings that in many cases are closely intertwined with clinical physiology and the methods of functional diagnostics are of great assistance to the clinical doctor).

On the one hand, studies of the physiology of labor have theoretical significance (the study of the general laws of the course of various functions during labor), and on the other hand, they solve practical problems with respect to improving labor processes at specific production facilities.

USSR

UDC: 621.372.837.1

DOMBROVSKIY, V. A.

"A Waveguide Protector"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329606, Division H, filed 29 Sep 70, published 9 Feb 72, pp 210-211

Translation: This Author's Certificate introduces a waveguide protector which consists of a housing and a commutation element. As a distinguishing feature of the patent, attenuation in the closed-channel position is increased by making the commutation element in the form of a slide valve with two waveguide channels -- one open, and the other shorted on the input side -- and by placing a matching load in this element.

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USSR

UDC: [621.313.322-81:537.312.62]001.24

BORZOV, G. G., GLEBOV, I. A., GNEDIN, L. P., ~~DOMBROVSKIY, V. V.~~ NOVITSKIY, V. G., SHAKHTARIN, V. N., Leningrad

"Problems in the Development of High-Power Turbogenerators With Superconductive Field Windings"

Moscow, Izv. AN SSSR: Energetika i Transport, No 4, Jul/Aug 72, pp 21-28

Abstract: The authors point out the advantages of cryogenic turbo-generators over conventional units. Elements of construction of high powered cryogenic turbogenerators are described, and the results of model tests are presented. The analysis shows that using superconductors in the field windings increases the unit power of turbogenerators by an order of magnitude. The results of experimental studies confirm the feasibility of a synchronous machine with rotating cryostat that has low liquid helium evaporability and provides torque transfer. The realization of high-power cryogenic turbogenerators must wait for a great deal of research on development of new materials, structural and refrigeration units, and automatic monitoring and control systems.

1/1

USSR

UDC: 621.37/39(038)

TERESHCHUK, R. M., DOMBRUGOV, R. M., BOSYY, N. D. et al.

"The Radio Amateur's Handbook. Part 2. In Two Parts. Sixth Edition, Revised and Enlarged"

Spravochnik radiolyubitelya. Ch. 2. V dvukh chastyakh. Izd. 6-ye, ispr. i dop. (cf. English above), Kiev, "Tekhnika", 1970, 678 pp, ill. 2 r. 7 k. (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A14 K)

Translation: The second part of the handbook (for part 1 see Abstract 12A13) deals with elements and devices of pulse technology, TV receivers, magnetic recording equipment, measurements and measuring equipment, elements of automation and remote control, and also power supply for radio equipment. A. K.

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Books

USSR

UDC: 621.37/39(038)

TERESHCHUK, R. M., DOMBRUCOV, R. M., BOSYY, N. D. et al.

"The Radio Amateur's Handbook. In Two Parts. Part 1. Sixth Edition, Revised and Enlarged"

Spravochnik radiolyubitelya. V dvukh chastyakh. Ch. 1. Izd. 6-ye, ispr. i dop.
(cf. English above), Kiev, "Tekhnika", 1970, 694 pp, ill. 1 r. 97 k. (from
RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A13 K)

Translation: The sixth edition of the handbook consists of two parts. The first part includes information on electrical and radio technology, electrical and radio materials, various radio components, acoustics and electroacoustics, electronic, ionic and semiconductor devices, low-frequency amplifiers, and radio transmission and reception equipment. A. K.

1/1

1/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--GENERATION IN A THREE MIRROR MISMATCHED RESONATOR -U-
AUTHOR--(02)-DOMELUNKSEN, V.G., TOLCHINSKAYA, T.B.
COUNTRY OF INFO--USSR D
SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 28, JAN. 1970, P. 183-184
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--HELIUM NEON LASER, RESONATOR, INTERFEROMETER

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1979/1677 STEP NO--UR/0051/70/028/000/0183/0184
CIRC ACCESSION NO--AP0047995
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--1RSEP70

CIRC ACCESSION NO--AP0047995

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF A 0.63 MICRON HE-NE LASER IN A THREE MIRROR RESONATOR IN WHICH THE END MIRRORS FORM AN UNSTABLE CONFIGURATION. WITH THE AID OF A SPHERICAL FABRY PEROT SCANNING INTERFEROMETER PLACED IN THE ACTIVE BRANCH OF THE RESONATOR THE SPECTRUM OF THE LONGITUDINAL TEM MODES BEING GENERATED WAS OBSERVED. IT IS FOUND THAT WHEN THE LENGTH OF THE ACTIVE BRANCH OF THE RESONATOR IS ALTERED, THE GENERATED MODES UNDERGO A FREQUENCY SHIFT WITHIN THE LIMITS OF THE LASING RANGE, BUT WHEN THE LENGTH OF THE PASSIVE BRANCH OF THE RESONATOR IS VARIED, IT IS NOT THE MODES BUT THE LASING RANGE ITSELF WHICH UNDERGOES A FREQUENCY SHIFT, AND IT IS POSSIBLE TO SELECT AN OPTIMAL POSITION OF THIS RANGE ON THE DOPPLER AMPLIFICATION CONTOUR.

Acc. Nr:

170049958

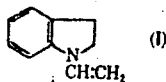
Abstracting Service:

CHEMICAL ABST.

Ref. Code:

14/70 UR 0409

90189g Synthesis of N-vinyl-2,3-dihydroindole. Makino,
L. P.; Domina, E. S.; Skvortsova, G. G. (Irkutsk. Inst. Org.
Khim. Irkutsk. USSR). *Khim. Geterotsikl. Soedin.* 1970, (1),
128-9 (Russ). Reaction of 2,3-dihydroindole with C_2H_2 in the
presence of metallic K in dry dioxane in an autoclave 0.5 hr at



170-5° gave 65-70% N-vinylindoline (I), b_p 94-5°, n_D^{20} 1.6125,
which polymd. on standing. G. M. Kosolapoff

REEL/FRAME

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DOMIN YAK I.A.
UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

241120 CONVERTING SOUND SIGNALS OF SET DURATION

FOR ANALYSIS. Human articulation of words or syllables requiring spectral analysis, for the purpose of perfecting recognition devices for such sounds, is transient in nature, rendering complex the differentiation of the signal from the attendant noise. The proposed method of increasing duration improves the retention of the spectral composition once it is converted from transient to fixed. It can then be recorded and made use of on tape. The method consists of transcribing the sound with a time lag to another carrier. The recording is first made on one tape recorder and then transcribed, with a given interval, by some electrical means to two other recorders. From these the recording is transferred back to the first, on which it appears, necessarily shif-

19781439

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ted in time. Depending on the complexity of the signal, this recording can again be played on to another machine and transcribed back, as often as necessary. By this means a continuous noise signal can be produced, with superimposed on it the continued spectrum of the desired signal.
21.9.67. as 1184001/18-24. N.I.APRELEV et alia.
(15.8.69.) Bul.13/1.4.69. Class 42m⁴, 42g.
Int.Cl. G06g, G11b.

EB

AUTHORS: Apreelev, N. I.; Dominyak, I. A.; Frid,
B. I.

7/2

19781440

Construction

USSR

UDC: 691.88

PONOMARENKO, E. P., Candidate of Technical Sciences,
TYKVA, P. N., DOMIO, A. A., GRIGORCHUK, G. P.,
DENISENKO, V. G., Engineers

"On Chrome Plating of Embedded Parts in Reinforced Concrete Structures"

Moscow, Beton i Zhelezobeton, No. 4, April, 1971, pp 26-28

Abstract: One of the effective means to prevent corrosion is chrome plating, especially the one deposited by the vacuum diffusion method. This method consists of keeping the parts for four hours in a vacuum furnace at 1300°C.

The steel treated by this method loses some of its strength unless it is subsequently normalized.

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USSR

PONOMARENKO, E. P., et al, Beton i Zhelezobeton, No 4, April 1971, pp 26-28

Welding of the chrome plated parts with stainless electrodes does not destroy the chrome plating.

Tests with nitric acid showed that the corrosion resistance of chrome plated specimens equals that of chrome-nickel steel.

Use on chrome plated parts for the prefabricated building panels results in considerable savings over the galvanizing method.

2/2

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1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--MECHANISM OF THE REACTION OF HYDROXYLAMINE WITH THE URACIL RING -U-
AUTHOR--(03)-BUDOVSKIY, E.I., DOMKIN, V.D., KOCHETKOV, N.K.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(1), 99-101
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ABSORPTION SPECTRUM, HYDROXYLAMINE, URACIL, CHEMICAL REACTION
MECHANISM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0021 STEP NO--UR/0020/70/190/001/0099/0101
CIRC ACCESSION NO--AT0125861
UNCLASSIFIED

2/2 016
CIRC ACCESSION NO--AT0125861

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE ABSORPTION SPECTRUM OF THE SYSTEM OF URIDINE 5 PRIME PHOSPHATE IN AQ. HONH SUB2 WAS FOLLOWED IN TIME AND THE 1ST STEP OF THE REACTION IS THE ADDN. OF HONH SUB2 TO C-5-C-6 DOUBLE BOND. AFTER WHICH THE ADDUCT UNDERGOES TRANSFORMATIONS SUGGESTED BY KOCHETKOV ET AL. (1967). FACILITY: INST. ORG. KHM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--AUTOMATIC RECORDING OF BREAKDOWN DURING THE IONIZATION AGING OF
POLYMER FILMS -U-
AUTHOR-(04)-DOMKIN, V.S., KUTLOV, YU.V., VALYASHOV, V.V., VARENTSOVA, N.V.

COUNTRY OF INFO--USSR

SOURCE--ZAVCO. LAB. 1970, 36(5), 566-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT

TOPIC TAGS--MATERIAL TESTING EQUIPMENT, IONIZATION, PLASTIC FILM,
ELECTRODE POTENTIAL, AUTOMATIC EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1972

STEP NO--UR/0032/70/036/005/0566/0567

CIRC ACCESSION NO--AP0132233

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132233

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TESTED FILM IS CLAMPED TO A GROUND METAL PLATE AND 30-35 ELECTRODES ARE CONTACTED WITH ITS SURFACE. THE ELEC. POTENTIAL OF THE ELECTRODES IS INCREASED AT THE SAME RATE UNTIL THE FILM UNDER THE ELECTRODE(S) BECOMES COND. (IONIZED). AN APP. IS DESCRIBED AND SHOWN IN A DIAGRAM WHICH RECORDS THE VOLTAGE AT WHICH THE ELEC. FILM BREAKDOWN TAKES PLACE UNDER EACH OF THE ELECTRODES. FACILITY: VLADIMIR. NAUCH.-ISSLED. INST. SIN. SMOL, VLADIMIR, USSR.

UNCLASSIFIED

USSR

UDC 51:155.001.57:681.3.06

DADANYAN, G. G., ~~DOMNIN, B. A.~~, SEMENOV, A. I., TUPISYN, V. G.

"Some Approaches to Formalization of Decision Making Processes in Organizational Structures"

Modelir. Sots. Protsessov [Modeling of Social Processes -- Collection of Works], Moscow, Nauka Press, 1970, pp 119-138 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V569 by M. Chelyshev).

Translation: The problem of decision making in organizations of various degrees of complexity is studied. Any organization consists of a system with definite, regular structural relationships between hierarchical levels of the administration and functional links of the organization. The concept of the expert as a person or group of persons responsible for decision making at a certain level of the hierarchy in the organization is introduced. Given the levels of the hierarchy of the organization at which decisions are made and the number of alternatives presented to the expert at each level, it becomes possible in principle to construct decision networks modeling the process of decision making in the organization. The purpose of the decision networks is to reflect the entire set of decisions or all possible flows of decisions leading to an unambiguous answer to the question included in a problem. As the process of decision making

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